Docket No.: P-0194

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Sung Bae JUN et al.

EXPEDITED PROCEDURE UNDER 37 C.F.R. §1.116

Serial No.: 09/800,999

Group Art Unit: 6665

Confirmation No.: 6665

Examiner: D. Bonshock

Filed: March 8, 2001

Customer No.: 34610

For: METHOD OF GENERATING SYNTHETIC KEY FRAME AND VIDEO BROWSING SYSTEM USING THE SAME

REQUEST FOR RECONSIDERATION

U.S. Patent and Trademark Office
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Customer Window, **Mail Stop AF**
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Arlington, VA 22202

Sir:

Applicants request reconsideration of the rejections set forth in the Office Action dated March 9, 2004. Claims 1-41 are pending in this application.

Applicants gratefully acknowledge the courtesies extended by Examiners Cabeca and Bonshock during the personal interview on April 22 with applicants' representative, Mr. Oren. The substance of the interview is incorporated in the following remarks.

The Office Action rejects claims 1, 3, 5, 6, 10, 12, 13, 15, 17, 18, 24 and 28-41 under 35 U.S.C. §112, first paragraph. During the personal interview, the Examiners agreed that this

rejection should be withdrawn. Thus, applicants need not provide any comments as it has been agreed that the specification enables one skilled in the art to practice the invention.

The Office Action also rejects claims 1-7, 9, 11, 12, 14-18, 20-27 and 30-39 under 35 U.S.C. §102(e) by U.S. Patent 6,526,215 to Hirai et al. (hereafter Hirai). The Office Action also rejects claims 8, 10, 13, 19, 40 and 41 under 35 U.S.C. §103(a) over Hirai and U.S. Patent 5,956,026 to Ratakonda. The Office Action also rejects claims 28 and 29 under 35 U.S.C. §102(e) by Ratakonda. The rejections are respectfully traversed.

Independent claim 1 recites selecting one of a key frame and a key region from each of the plurality of sections and combining the selected one of the key frame and the key region from each of the plurality of sections to form a synthetic key frame.

As discussed during the personal interview, Hirai does not teach or suggest the key frame, the key region and the synthetic key frame as recited in independent claim 1. That is, the present application sets forth that a synthetic key frame may be created by combining regions having meaningful information or key frames in order to represent a specific segment in a video stream. See col. 9, lines 6-9. The present application also discusses that key region may be a region that is capable of concisely representing contents of a particular segment such as a text, human face, news icon. See page 2, lines 20-22.

As discussed in the personal interview, Hirai does not teach or suggest the claimed key frame, key region or synthetic key frame. That is, the Office Action appears to assert that Hirai is being relied upon because it divides moving data pictures into different scenes in order to

form M-icons. Hirai's Figure 10 shows a plurality of M-icons arranged on a screen. However, each of these M-icons are not a key frame or a key region, as recited in independent claim 1. Thus, there is no suggestion for combining selected key frames and/or key regions from each of a plurality of sections in order to form a synthetic key frame.

More specifically, Hirai discloses dividing a video stream into scenes or cuts. Each of the cuts is one frame. In other words, the M-icon may represent an entire frame from a video stream. See col. 2, lines 45-50; col. 4, lines 48-50; col. 8, lines 35-43 and col. 9, lines1-5. Furthermore, col. 2, lines 2-6 sets forth that the M-icon is produced by thinning out data from each frame (such as using a compression technique). Clearly, Hirai's M-icons are not key frames or key regions from a video stream.

During the personal interview, the Examiners referenced Hirai's col. 15, lines 43-49. However, the sentence relied upon in this section merely states that an icon is indicative of an abstract. There is no suggestion that the M-icon is a key frame or a key region. For at least the reasons set forth above, applicants submit that Hirai's M-icon represents a frame (or cut) of a video sequence. Absent explicit language within Hirai, it is improper to hypothesize regarding the meaning of M-icon. Applicants have identified specific language (identified above) regarding an M-icon being a frame of video. This is not a key region or key frame. As such, there is no suggestion for selecting one of key frame and a key region from each of a plurality of sections as recited in independent claim 1.

Furthermore, since there is no suggestion in Hirai for the claimed selection of the key frame and the key region, there is no suggestion for combining the selected features in order to form a synthetic key frame as recited in independent claim 1. Hirai has no suggestion for a synthetic key frame. As discussed at the personal interview, Hirai's FIG. 10 does not show a synthetic key frame. Thus, independent claim 1 defines patentable subject matter.

Each of independent claims 5, 12, 18 and 24 define patentable subject matter for at least similar reasons set forth above. However, applicants would respectfully like to point out that each of these claims may include slightly different claim language and may represent different features. For example, independent claim 5 further recites describing a list of key frame and/or key region included in constituent elements of the synthetic key frame. Hirai's col. 15, line 26 does not suggest this feature as alleged in the Office Action. Furthermore, independent claim 12 recites generating a combination of one of key frames and key regions, or key frame and key region included in constituent elements of the synthetic key frame, and physically storing the combination to describe the synthetic key frame. Hirai does not suggest these additional features.

Still further, independent claim 18 recites assigning the synthetic key frame to a key image locator, a hierarchical summary list for describing lower summary structures, and structural information of the video stream. Hirai does not suggest assigning a synthetic key frame to a key image locator, a hierarchical summary list for describing lower summary structures, and structural information of the video stream. For example, Hirai has no suggestion that a screen

showing a plurality of M-icons may be assigned to a key image locator, a hierarchical summary list for describing lower summary structures and structural information of the video stream. Thus, independent claim 18 defines patentable subject matter at least for this additional reason.

Independent claim 28 also recites dividing a video stream into a plurality of streams, and synthesizing one of a key frame and a key region representing content of each section into one image, to generate a synthetic key frame. Independent claim 28 further recites providing a user interface to a predetermined display to browse a video related with the generated synthetic key frame, selecting the synthetic key frame according to an input of the user and reproducing a segment represented by the selected synthetic key frame. As discussed during the personal interview, Ratakonda does not teach or suggest these features as Ratakonda does not suggest a key frame, a key region or a synthetic key frame.

For at least the reasons set forth above, each of independent claims 1, 5, 12, 18, 24 and 28 define patentable subject matter. Claims 2-4, 30 and 31 depend from claim 1, claims 6-11 and 32-33 depend from claim 5, claims 13-17 and 34-35 depend from claim 12, claims 19-23 and 36-37 depend from claim 18, claims 25-27 and 38-39 depend from claim 24 and claims 29 and 40-41 depend from claim 28, and therefore define patentable subject matter for at least this reason.

In addition, each of the dependent claims recites features that further and independently distinguish over the applied references. For example, dependent claim 6 recites that the describing includes an ID, a representative segment locator which describes the temporal

information of the segment that the synthetic key frame represent and one of a key frame list and a key region list for identifying the elements of the synthetic key frame. Dependent claim 6 further recites that the describing additionally includes a fidelity value indicating how faithfully the synthetic key frame represents the segment and information on the arrangement of each constituent element when the key frame or key region is displayed as the constituent element of the synthetic key frame. The cited references do not teach or suggest these features of dependent claim 6. More specifically, the sections of Hirai relied upon do not suggest these features. The Office Action does not appear to have addressed all of the claimed features.

Further, dependent claim 8 recites the synthetic key frame includes the key frame list, each element of the key frame list has a key frame locator as a key frame description unit structure and, when the synthetic key frame includes the key region list, each element of the key region list has a key region locator as a key region description unit structure. The Office Action appears to reply on Ratakonda for these features. However, Ratakonda's col. 6, lines 45-67 do not suggest these missing features as alleged in the Office Action.

Still further, dependent claim 9 recites the key frame locator includes an image locator capable of containing the location, annotation and a related segment with respect to a stored image, as data for designating the key frame, a segment locator for indicating information including a segment locator that designates a segment represented by corresponding key frame, and additionally a fidelity value indicating how faithfully the key frame represents the segment.

More specifically, the sections of Hirai relied upon do not suggest these features. The Office Action does not appear to have addressed all of the claimed features.

Even still further, dependent claim 10 recites the key region locator, serving as a data structure for describing the key region, is information logically/physically designating stored one of location and segment data, wherein the key region locator includes an inherent ID for identifying the key region; an image locator and region area info to locate the one of region and region data to locate the region; and a representative segment locator, wherein the key region locator additionally includes a fidelity value indicating how faithfully the key region represents the segment, an annotation, and a list of related segment with the key region. The applied references do not suggest these features.

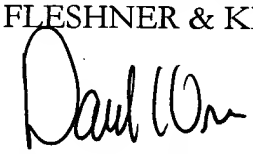
Still further, dependent claim 19 recites the key image locator is a data structure for designating an image using a key region locator, a key frame locator and a synthetic key frame locator. The applied references do not suggest these features.

For at least the reasons set forth above, each of claims 1-41 define patentable subject matter. Thus, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance of claims 1-41 are earnestly solicited.

If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, **David C. Oren**, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
FLESHNER & KIM, LLP



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